

Docket: 3816.10
September 16, 2005 (9:45am)

Remarks

Claims 1-12 and 27-37 remain in the application.

Non-elected claims 17-19 and 21-23 have been canceled.

The Examiner has rejected claims 9, 10, and 12 under 35 U.S.C. §112, ¶2 for lack of antecedent basis. The bases of these rejections are not understood, but the amendments to claims 9-12 attempt to address the rejection.

The Examiner has rejected claims 1-3 and 5-12 under 35 U.S.C. 102(b) as being anticipated by Noguchi et al. (U.S. Patent 5,211,761, hereafter Noguchi). This anticipatory rejection is traversed. Noguchi plasma sprays a silicon layer 2 onto a substrate 1 and thereafter grows by liquid phase growth (col. 2, ll. 56-60) a polycrystalline silicon thin film 3 (col. 2, l. 47) onto the plasma sprayed silicon layer 2.

Most clearly for the anticipatory rejection, Noguchi's substrate 1 is not a silicon part, as required by the claim, but is instead made of a ceramic or quartz glass (col. 2, ll. 38-40). The principal reason for Noguchi's plasma sprayed layer 2 is to form an adhesion enhancing layer (col. 2, l. 39) to allow the use of ceramic or quartz glass substrates that are more economical than silicon substrates but provide poor adhesion with the after deposited silicon (col. 1, ll. 27-38). Clearly, Noguchi teaches his adhesion enhancing layer for substrates other than the claimed silicon. Further, no seam of the claim separates Noguchi's substrate 1 and film 3 during his plasma spraying step for the silicon to be sprayed across. Noguchi instead plasma sprays silicon into a space above his substrate 1 without reference to his film 3. During his spraying step, his film 3 does not even exist but is instead formed afterwards out of a liquid. Yet further, Noguchi's plasma sprayed layer 2 never forms a coating on the after-deposited film 3.

A new dependent claim 32 requires the silicon be sprayed onto both the juxtaposed parts. In contrast, Noguchi sprays silicon onto only one part. A new dependent claim 33 requires the plasma sprayed layer to fix the two parts together. A new set of claims 34-36 emphasize the seam existing at the time of spraying.

The Examiner attempts to dismiss perpendicular structural limitations of claims 8-12 as

Docket: 3816.10
September 16, 2005 (9:45am)

being irrelevant to the process of Noguchi. This dismissal is traversed. Applying an old method to a new structure is patentable if there is no suggestion in the art of doing so. The Examiner's dismissal amounts to denying any patentable combination of old elements. Accordingly, these claims patentably distinguish over Noguchi's planar geometry in which such perpendicular geometry is not suggested.

The Examiner has rejected claims 27-29 under 35 U.S.C. 103(a) as being obvious over Niemirowski et al. (U.S. Patent 6,056,123, hereafter Niemirowski) in view of Noguchi. This rejection is traversed. It is unobvious to apply Noguchi to Niemirowski. First, there is no reason to form Noguchi's photovoltaic devices on Niemirowski's wafer support tower. Secondly, as stated in the prior anticipatory rejection, Noguchi's plasma sprayed layer is needed only when the substrate is formed of a ceramic or quartz. Noguchi teaches that silicon substrates are satisfactory except for cost. Niemirowski, on the other hand, requires all parts to be formed of silicon regardless of the cost. The art simply lacks a teaching for the need for a silicon adhesion enhancing layer on a silicon body. Niemirowski's silicon tower does not require or benefit from Noguchi's adhesion enhancing layer.

A new dependent claim 37 emphasizes the fixing function nature of the plasma sprayed silicon layer.

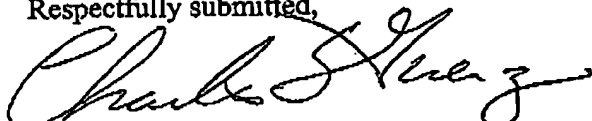
The Examiner has rejected claim 4 under 35 U.S.C. 103(a) as being obvious over Noguchi in view of Wang et al. (U.S. Patent 6,787,195, hereafter Wang). This claim depends from a claim believed to be in allowable form and should therefore also be allowable.

Docket: 3816.10
September 16, 2005 (9:45am)

In view of the above amendments and remarks, consideration and allowance of all claims are respectfully requested. If the Examiner believes that a telephone interview would be helpful, he is invited to contact the undersigned attorney at the listed telephone number, which is on California time.

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Respectfully submitted,


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